

Exercise 6

Listing Networks:

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Windows PowerShell
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Try the new cross-platform PowerShell https://aka.ms/pscore6

PS C:\Users\Oyo Magpayo> docker network ls
NETWORK ID          NAME                DRIVER              SCOPE
c88ad854ad16        bridge             bridge             local
b0d2b5835a47        host               host               local
69a018416f40        none              null               local
PS C:\Users\Oyo Magpayo> docker network inspect bridge
[
  {
    "Name": "bridge",
    "Id": "c88ad854ad16c4d797070b328e037ff4ab7e56caa785bde099a566706b97f941",
    "Created": "2021-06-22T12:32:33.0138304Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": null,
      "Config": [
        {
          "Subnet": "172.17.0.0/16"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {},
    "Options": {
      "com.docker.network.bridge.default_bridge": "true",
      "com.docker.network.bridge.enable_icc": "true",
      "com.docker.network.bridge.enable_ip_masquerade": "true",
      "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
      "com.docker.network.bridge.name": "docker0",
      "com.docker.network.driver.mtu": "1500"
    },
    "Labels": {}
  }
]
PS C:\Users\Oyo Magpayo> docker run --rm -d --name dummy delner/ping:1.0
Unable to find image 'delner/ping:1.0' locally
docker: Error response from daemon: pull access denied for delner/ping, repository does not exist or may require 'docker login': denied: requested access to the resource is denied.
See 'docker run --help'.
PS C:\Users\Oyo Magpayo> docker image

Usage: docker image COMMAND

Manage images

Commands:
  build      Build an image from a Dockerfile
  history    Show the history of an image
  import     Import the contents from a tarball to create a filesystem image
  inspect    Display detailed information on one or more images
  load       Load an image from a tar archive or STDIN
  ls         List images
  prune      Remove unused images
  pull       Pull an image or a repository from a registry
  push       Push an image or a repository to a registry
  rm         Remove one or more images
  save       Save one or more images to a tar archive (streamed to STDOUT by default)
  tag        Create a tag TARGET_IMAGE that refers to SOURCE_IMAGE

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Run 'docker image COMMAND --help' for more information on a command.
PS C:\Users\Oyo Magpayo> docker image ls
REPOSITORY          TAG                 IMAGE ID            CREATED             SIZE
oyomagpayo/ping      1.0                8141bcbfd002       4 hours ago       139MB
ubuntu               16.04              065cf14a189c       4 days ago        135MB
httpd                2.4                39c2d1c93266       3 weeks ago       138MB
PS C:\Users\Oyo Magpayo> docker run --rm -d --name dummy oyomagpayo/ping:1.0
e21caa9bcd29a0999255956d59147454b9a403b0fc1a5de7174312563c8af46d
PS C:\Users\Oyo Magpayo> docker network inspect bridge
[
  {
    "Name": "bridge",
    "Id": "c88ad854ad16c4d797070b328e037ff4ab7e56caa785bde099a566706b97f941",
    "Created": "2021-06-22T12:32:33.0138304Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": null,
      "Config": [
        {
          "Subnet": "172.17.0.0/16"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {
      "e21caa9bcd29a0999255956d59147454b9a403b0fc1a5de7174312563c8af46d": {
        "Name": "dummy",
        "EndpointID": "f35ae33a43f0f004a7bd4ec64c0d2987657eeb88ef3a472b65bf104ba397125",
        "MacAddress": "02:42:ac:11:00:02",
        "IPv4Address": "172.17.0.2/16",
        "IPv6Address": ""
      }
    },
    "Options": {
      "com.docker.network.bridge.default_bridge": "true",
      "com.docker.network.bridge.enable_icc": "true",
      "com.docker.network.bridge.enable_ip_masquerade": "true",
      "com.docker.network.bridge.host_binding_ipv4": "0.0.0.0",
      "com.docker.network.bridge.name": "docker0",
      "com.docker.network.driver.mtu": "1500"
    },
    "Labels": {}
  }
]
PS C:\Users\Oyo Magpayo> docker run --rm -d -e PING_TARGET=172.17.0.2 --name pinger oyomagpayo/ping:1.0
fcf94cd1489654ba722266e63148126767fe2627b2908e6bbfae968401a54197
PS C:\Users\Oyo Magpayo> docker ps
CONTAINER ID   IMAGE                COMMAND                  CREATED        STATUS        PORTS        NAMES
fcf94cd14896   oyomagpayo/ping:1.0  "sh -c 'ping $PING_T..." 8 seconds ago  Up 6 seconds                pinger
e21caa9bcd29   oyomagpayo/ping:1.0  "sh -c 'ping $PING_T..." About a minute ago  Up About a minute          dummy
PS C:\Users\Oyo Magpayo> docker logs pinger
PING 172.17.0.2 (172.17.0.2) 56(84) bytes of data.
64 bytes from 172.17.0.2: icmp_seq=1 ttl=64 time=0.085 ms
64 bytes from 172.17.0.2: icmp_seq=2 ttl=64 time=0.033 ms
64 bytes from 172.17.0.2: icmp_seq=3 ttl=64 time=0.042 ms
64 bytes from 172.17.0.2: icmp_seq=4 ttl=64 time=0.049 ms
64 bytes from 172.17.0.2: icmp_seq=5 ttl=64 time=0.040 ms
64 bytes from 172.17.0.2: icmp_seq=6 ttl=64 time=0.045 ms
64 bytes from 172.17.0.2: icmp_seq=7 ttl=64 time=0.046 ms
64 bytes from 172.17.0.2: icmp_seq=8 ttl=64 time=0.110 ms
64 bytes from 172.17.0.2: icmp_seq=9 ttl=64 time=0.048 ms
64 bytes from 172.17.0.2: icmp_seq=10 ttl=64 time=0.049 ms
64 bytes from 172.17.0.2: icmp_seq=11 ttl=64 time=0.046 ms

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64 bytes from 172.17.0.2: icmp_seq=10 ttl=64 time=0.049 ms
64 bytes from 172.17.0.2: icmp_seq=11 ttl=64 time=0.046 ms
64 bytes from 172.17.0.2: icmp_seq=12 ttl=64 time=0.045 ms
64 bytes from 172.17.0.2: icmp_seq=13 ttl=64 time=0.042 ms
64 bytes from 172.17.0.2: icmp_seq=14 ttl=64 time=0.045 ms
64 bytes from 172.17.0.2: icmp_seq=15 ttl=64 time=0.068 ms
PS C:\Users\Oyo Magpayo> docker run --rm -d -e PING_TARGET=dummy --name pinger oyomagpayo/ping:1.0
docker: Error response from daemon: Conflict. The container name "/pinger" is already in use by container "fcf94cd1489654ba722266e63148126767fe2627b2908e6bbfae968401a54197". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
PS C:\Users\Oyo Magpayo> docker run --rm -d -e PING_TARGET=dummy --name pinger oyomagpayoo/ping:1.0
Unable to find image 'oyomagpayoo/ping:1.0' locally
docker: Error response from daemon: pull access denied for oyomagpayoo/ping, repository does not exist or may require 'docker login':
denied: requested access to the resource is denied.
See 'docker run --help'.
PS C:\Users\Oyo Magpayo> docker run --rm -d -e PING_TARGET=dummlly --name pinger oyomagpayo/ping:1.0
docker: Error response from daemon: Conflict. The container name "/pinger" is already in use by container "fcf94cd1489654ba722266e63148126767fe2627b2908e6bbfae968401a54197". You have to remove (or rename) that container to be able to reuse that name.
See 'docker run --help'.
PS C:\Users\Oyo Magpayo> docker run --rm -d -e PING_TARGET=dummy --name pingerr oyomagpayo/ping:1.0
db920c1282aa739f3c8c9b2594da03a410d265066046ab6dc75af9d0b781313e
PS C:\Users\Oyo Magpayo> docker ps

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CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
fcf94cd14896	oyomagpayo/ping:1.0	"sh -c 'ping \$PING_T..."	5 minutes ago	Up 5 minutes		pinger
e21caa9bcd29	oyomagpayo/ping:1.0	"sh -c 'ping \$PING_T..."	6 minutes ago	Up 6 minutes		dummy

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PS C:\Users\Oyo Magpayo> docker stop dummy
dummy
PS C:\Users\Oyo Magpayo>

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Managing custom networks

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PS C:\Users\Oyo Magpayo> docker network create skynet
1e2df43cc093a2bcbe8fafb19d60ff8e4d39e385030e92e15dc1da60a56e89d9
PS C:\Users\Oyo Magpayo> docker network inspect skynet
[
  {
    "Name": "skynet",
    "Id": "1e2df43cc093a2bcbe8fafb19d60ff8e4d39e385030e92e15dc1da60a56e89d9",
    "Created": "2021-06-22T19:11:06.4573209Z",
    "Scope": "local",
    "Driver": "bridge",
    "EnableIPv6": false,
    "IPAM": {
      "Driver": "default",
      "Options": {},
      "Config": [
        {
          "Subnet": "172.18.0.0/16",
          "Gateway": "172.18.0.1"
        }
      ]
    },
    "Internal": false,
    "Attachable": false,
    "Ingress": false,
    "ConfigFrom": {
      "Network": ""
    },
    "ConfigOnly": false,
    "Containers": {},
    "Options": {},
    "Labels": {}
  }
]
PS C:\Users\Oyo Magpayo>

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Adding containers to a network

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PS C:\Users\Oyo Magpayo> docker run --rm -d --network skynet --name dummy oyomagpayo/ping:1.0  
abdef654d38eb3bfdc3420e58a77f3b8350442a1bab1d7e49f87f242a71bbb25
```

```
PS C:\Users\Oyo Magpayo> docker logs pinger
```

```
PING 172.17.0.2 (172.17.0.2) 56(84) bytes of data.  
64 bytes from 172.17.0.2: icmp_seq=1 ttl=64 time=0.085 ms  
64 bytes from 172.17.0.2: icmp_seq=2 ttl=64 time=0.033 ms  
64 bytes from 172.17.0.2: icmp_seq=3 ttl=64 time=0.042 ms  
64 bytes from 172.17.0.2: icmp_seq=4 ttl=64 time=0.049 ms  
64 bytes from 172.17.0.2: icmp_seq=5 ttl=64 time=0.040 ms  
64 bytes from 172.17.0.2: icmp_seq=6 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=7 ttl=64 time=0.046 ms  
64 bytes from 172.17.0.2: icmp_seq=8 ttl=64 time=0.110 ms  
64 bytes from 172.17.0.2: icmp_seq=9 ttl=64 time=0.048 ms  
64 bytes from 172.17.0.2: icmp_seq=10 ttl=64 time=0.049 ms  
64 bytes from 172.17.0.2: icmp_seq=11 ttl=64 time=0.046 ms  
64 bytes from 172.17.0.2: icmp_seq=12 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=13 ttl=64 time=0.042 ms  
64 bytes from 172.17.0.2: icmp_seq=14 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=15 ttl=64 time=0.068 ms  
64 bytes from 172.17.0.2: icmp_seq=16 ttl=64 time=0.048 ms  
64 bytes from 172.17.0.2: icmp_seq=17 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=18 ttl=64 time=0.043 ms  
64 bytes from 172.17.0.2: icmp_seq=19 ttl=64 time=0.042 ms  
64 bytes from 172.17.0.2: icmp_seq=20 ttl=64 time=0.046 ms  
64 bytes from 172.17.0.2: icmp_seq=21 ttl=64 time=0.095 ms  
64 bytes from 172.17.0.2: icmp_seq=22 ttl=64 time=0.085 ms  
64 bytes from 172.17.0.2: icmp_seq=23 ttl=64 time=0.111 ms  
64 bytes from 172.17.0.2: icmp_seq=24 ttl=64 time=0.174 ms  
64 bytes from 172.17.0.2: icmp_seq=25 ttl=64 time=0.046 ms  
64 bytes from 172.17.0.2: icmp_seq=26 ttl=64 time=0.042 ms  
64 bytes from 172.17.0.2: icmp_seq=27 ttl=64 time=0.047 ms  
64 bytes from 172.17.0.2: icmp_seq=28 ttl=64 time=0.053 ms  
64 bytes from 172.17.0.2: icmp_seq=29 ttl=64 time=0.061 ms  
64 bytes from 172.17.0.2: icmp_seq=30 ttl=64 time=0.046 ms  
64 bytes from 172.17.0.2: icmp_seq=31 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=32 ttl=64 time=0.062 ms  
64 bytes from 172.17.0.2: icmp_seq=33 ttl=64 time=0.051 ms  
64 bytes from 172.17.0.2: icmp_seq=34 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=35 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=36 ttl=64 time=0.048 ms  
64 bytes from 172.17.0.2: icmp_seq=37 ttl=64 time=0.047 ms  
64 bytes from 172.17.0.2: icmp_seq=38 ttl=64 time=0.067 ms  
64 bytes from 172.17.0.2: icmp_seq=39 ttl=64 time=0.061 ms  
64 bytes from 172.17.0.2: icmp_seq=40 ttl=64 time=0.045 ms  
64 bytes from 172.17.0.2: icmp_seq=41 ttl=64 time=0.084 ms  
64 bytes from 172.17.0.2: icmp_seq=42 ttl=64 time=0.046 ms  
64 bytes from 172.17.0.2: icmp_seq=43 ttl=64 time=0.044 ms  
64 bytes from 172.17.0.2: icmp_seq=44 ttl=64 time=0.041 ms
```